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Pain and depressive symptoms

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Pain and depressive symptoms: exploring cognitive fusion and self-compassion in a moderated mediation model

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Abstract

The association between chronic pain (CP) and depression is complex, and influenced by several psychological processes. Cognitive fusion (i.e. being entangled with one´s internal experiences) and self-compassion (i.e. being touched by one´s suffering, with a motivation to alleviate it) have been hypothesized as relevant psychological processes in physical and mental health, but few studies have addressed them in CP, and none in a comprehensive model relating pain intensity and depressive symptoms. This study tests, in a moderated mediation model, the mediator role of cognitive fusion between pain intensity and depressive symptoms, and the moderator effect of self-compassion in this mediation. In a cross-sectional study, 231 female CP patients (Age: M = 48.51, SD = 10.89) responded online self-report measures. PROCESS, an SPSS macro for conducting path analysis modeling, was used to test the hypothesized model. The model explained 63% of depressive symptoms, and cognitive fusion mediates the association between pain intensity and depressive symptoms. Also, self-compassion moderates this mediation (regardless of self-compassion being low, moderate or high). Although pain intensity is a predictor of depressive symptoms, fusion with thinking in general mediates this association, this relationship is buffered when patients are able to respond to setbacks and perceived shortcomings with self-kindness and warmth. Clinical and theoretical implications are discussed.

Keywords: chronic pain; depression; cognitive fusion; self-compassion; descriptive survey study.

Introduction

Chronic Pain (CP) is a medical condition characterized by constant or sporadic pain or discomfort for at least 3 months (Merksey & Bogduk, 1994). Studies suggest a CP prevalence of 12% to 30% of Europeans (Breivik, Collett, Ventafridda, Cohen, & Gallacher, 2006), with major impact on quality of life, social and occupational capacity (e.g. Breivik, Eisenberg, & O'Brien, 2013).

Individuals who suffer from CP also experience depressive symptoms. Indeed, depression is a particularly common experience in CP patients (e.g. Jobski, Luque-Ramos, Albrecht, & Hoffmann, 2017; McDonald, Shellman, Graham, & Harrison, 2016). One study found that 52% of a heterogeneous CP sample met criteria for major depression (Elliott, Renier, & Palcher, 2003). Although the causal relation between depression and CP is complex, there seems to be more evidence supporting that depression is a consequence of pain in CP, than the other way around (Wörz, 2003), and some authors suggest this association is influenced by cognitive factors (Gatchel, Peng, Peters, Fuchs, & Turk, 2007). Indeed, cognitive factors have been a major avenue of research into the question of why some people with CP develop depression symptoms while others do not (Turk, Okifuji, & Scharff, 1995). During the past 30 years, much of the research on the cognitive factors involved in depression in CP have focused more on the content of thoughts (e.g. Crombez, Eccleston, Van Damme, Vlaeyen, & Karoly, 2012) and less on the psychological processes that underlie different thoughts. One psychological process that seems to be an important factor in CP disability is experiential avoidance (Ruiz-Párraga & López-Martínez, 2015), i.e. the unwillingness to experience unwanted or painful internal events (e.g. thoughts, emotions, physical sensations) that leads to attempts to control or escape from these internal experiences (Chawla & Ostafin, 2007). Avoidance has received a lot of empirical attention and support from within the Psychological

Flexibility Model (McCracken & Vowles, 2014), and it seems to be related to cognitive fusion (Gillanders et al., 2014). Cognitive fusion is the process through which the content describing an object or event is experienced as undistinguished from the actual object or event (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). In other words, it is a deleterious psychological process by which an individual believes in the literal meaning of their thoughts rather than seeing them as transient internal experiences (Greco, Lambert, & Baer, 2008). For example, the thought "this pain will never stop" is experienced as a certainty about the future rather than just a thought that occurred in the present. Thus, cognitive fusion might be understood as an underlying process of other cognitive and emotional factors that have already been studied in CP. For example, one study found that cognitive fusion mediates the association between pain catastrophizing and disability in young people with CP (Solé et al., 2016). Although there are a few studies on the relationship between cognitive fusion and emotional distress, particularly depression, in different populations (e.g. Gillanders et al., 2014), it has not been extensively studied in CP (McCracken, DaSilva, Skillicorn, & Doherty, 2014; Scott, McCracken, & Norton, 2016). According to the Psychological Flexibility Model, cognitive fusion is a key potentially harmful psychological process through which difficult experiences, such as physical sensations, lead to psychological suffering such as depression (Hayes et al., 2006). Considering that the relationship between pain and depressive symptoms seems to be influenced by cognitive factors, and that cognitive fusion is an underlying process in cognitive and emotional factors, this raises the hypothesis that cognitive fusion might be an underlying mechanism through which pain and depressive symptoms are related. The few studies that have explored cognitive fusion in CP found that it is significantly correlated with pain interference, affective stress, mental well-being and quality of life in CP (Wicksell, Renöfält, Olsson, Bond, & Melin, 2008) and with depression in CP

(McCracken et al., 2014). This seems to suggest that cognitive fusion may be relevant in CP, but more research is needed to better understand the extant of its role.

Recent studies suggest the potential benefits of self-compassion in chronic illness (Pinto-Gouveia, Duarte, Matos, & Fráguas, 2014; Sirois, Molnar, & Hirsch, 2015), particularly in reducing depression and anxiety symptoms (Neff, Hsieh, & Dejitterat, 2005). Self-compassion is described as the ability to be touched by one´s suffering, combined with the motivation to alleviate it through a mindful and kind manner, with the wisdom to acknowledge that suffering is part of our common humanity (Neff, 2003). It encompasses a mindful and accepting way of experiencing difficulties, but goes beyond that as it entails a kind and warm way of self-to-self relating (Neff & Dahm, 2015; Neff & Tirch, 2013). Self-compassion relates to more health-promoting behaviors (Dunne, Sheffield, & Chilcot, 2016) and less psychopathological symptoms in cancer patients (Gillanders, Sinclair, MacLean, & Jardine, 2015). Although negative associations between self-compassion and psychopathological symptoms have been evidenced in several studies (MacBeth & Gumley, 2012), few have explored self-compassion in CP. Those who did found self-compassion to be a significant predictor of depression symptoms in CP (Costa & Pinto-Gouveia, 2011a, 2011b), even when controlling for demographic variables (e.g. age, level of education) (Wren et al., 2012). Additionally, one study found that self-compassion is a moderator of the affective and cognitive responses to a vignette-based social situation in a sample of participants with CP (Purdie & Morley, 2015). Another study found that self-compassion predicts changes in depression symptoms and illness intrusiveness in participants with CP (Ziemer, Fuhrmann, & Hoffman, 2017). Nevertheless, more studies on the role of self-compassion in CP are needed in order to unequivocally establish this psychological process as a relevant one in psychological interventions for CP. More specifically, there is still a

knowledge gap on how self-compassion might operate and influence the impact of other psychological processes on depressive symptoms in CP. Overall, self-compassion is postulated to counter the nefarious effects of negative psychological processes, thus diminishing psychological suffering and psychopathology (MacBeth & Gumley, 2012; Gilbert, 2010), even though to our knowledge this has not been tested in CP.

The current study has two main aims: 1) to test whether cognitive fusion mediates the relationship between pain intensity and depressive symptoms in CP; 2) to test if self-compassion emerges as a moderator of the mediation relationship between cognitive fusion and depressive symptoms. We expect cognitive fusion to mediate the relationship between pain intensity and depressive symptoms, and that self compassion moderates the mediation.

Method

Participants

A convenience sample of 231 Portuguese women diagnosed with a CP condition was collected online via three national CP associations. The online platform (Limesurvey) was allocated to an academic server. Participants could access the study platform through the link advertised by the CP associations. Once accessed, participants could start responding a set of sociodemographic items, medical questions and self-report instruments. The platform private content (settings, responses and statistics) could only be accessed through a private username and password which only the first author of the study had access to. Inclusion criteria: a) having constant or sporadic pain for more than three months; b) being more than 18 years of age; c) being able to read and write Portuguese; d) having access to an online device in order to complete the battery of questionnaires. Participants were not compensated for participating in the study.

Our sample had a mean age of 48.51 (SD = 10.89). The majority of participants had a high school (*n* = 73; 31.6%) or bachelors (*n* = 88; 38.1%) degree, and were married

(n = 150; 64.9%). Additionally, a great portion of our sample was employed (n = 153; 66.2%). All information was self-reported, including CP diagnosis. Almost all participants reported having been previously diagnosed with a CP condition by a medical doctor (n = 224; 97%), of which the majority by a rheumatologist (n = 183; 79.2%). Fibromyalgia was the most common diagnosis in our sample (n = 204; 88.3%), followed by low back pain (n = 33; 14.3%) and Arthrosis (n = 30; 13%). It is worth noting that participants could report more than one CP condition. The majority of participants presented CP for more than 10 years (n = 128; 55.4%) or from 5 to 10 years (n = 54; 23.4%). Also, the majority of participants were receiving pharmacological treatment for CP (n = 208; 90.0%), and more than half of participants had at least another comorbid chronic illness (n = 122; 52.8%). Finally, participants reported sleep-related difficulties, such as waking up several times during the night (60.2%) and difficulty in falling asleep (more than 30 minutes) (18.6%).

Procedures

This study is part of a larger one that aims to explore the role of several psychological processes in the etiology of psychopathological symptoms in CP.

Five nationwide CP associations were contacted via email and/or facebook private message, and were invited to collaborate by advertising the study through their mailing list contacts and/or facebook pages. Three CP associations agreed to collaborate and were given a direct link to the online protocol. The protocol was accessed by 479 participants, of which 246 completed the battery of questionnaires (51%). We have excluded from our sample 15 participants who completed the questionnaires: 9 men and 6 Brazilian women, in order to have a homogenous sample in terms of gender and nationality. Our final sample was composed of 231 female Portuguese participants. Information regarding the aims of the study and the target population was provided, as well as assured the voluntary

nature of participation and confidentiality of data (in the information sheet, the research team stated their commitment to a) guarantee total confidentiality of data provided; b) to use the data strictly for the purposes of the current research). Participants provided informed consent by clicking on the "I accept to participate in the study" button.

The current study was previously approved by the Ethics Committee of the Faculty of Psychology and Educational Sciences of University of Coimbra, Portugal.

Measures

Numeric Pain Rating Scale (NPRS; Hartrick, Kovan, & Shapiro, 2003; Ferreira-Valente, Pais-Ribeiro, & Jensen, 2011) is an 11-point scale (0 = ''No pain''; 10 = ''Worst imaginable pain''). Respondents select the number that best represents their pain intensity. In our study, a composite variable of "average pain intensity" was created by three items: 1) pain currently experienced; 2) highest pain experienced in last 24h; 3) lowest pain experienced in last 24h. Results showed an internal consistency of $\alpha = .85$.

Depression, Anxiety and Stress Scale-21 (DASS-21; Lovibond & Lovibond, 1995; Ribeiro, Honrado, & Leal, 2004) is a 21-item measure depression, anxiety and stress symptoms (e.g. "I felt down-hearted and blue", "I felt that life was meaningless"). The items are rated on a 4-point scale (0 = did not apply to me at all; 3 = applied to me very much or most of the time). In the original study, the subscales had excellent internal consistency ($\alpha = .91$ for depression; $\alpha = .84$ for anxiety; $\alpha = .90$ for stress). Given the amount of evidence for the relationship between CP and depression, we aimed to exclusively focus on the processes underlying this relationship. The current study found a good internal consistency ($\alpha = .93$) for the depression subscale.

Cognitive Fusion Questionnaire (CFQ; Gillanders et al., 2014; Pinto-Gouveia, Dinis, Gregório, & Pinto, 2018) is composed of 7-items and has a one-factor structure that assesses the tendency to get entangled with internal experiences (cognitive fusion)

(e.g. "I get upset with myself for having certain thoughts", "I struggle with my thoughts", "I tend to get very entangled in my thoughts"). The items are rated in a 7-point scale (1= "never true"; 7 "always true"). Higher score means greater cognitive fusion. The original study presented a good internal consistency (α between .88 and .93 across five samples). The current study found an internal consistency of $\alpha = .97$.

Self-Compassion Scale-Short form (SCS-SF; Raes, Pommier, Neff, & Van Gucht, 2011; Castilho, Pinto-Gouveia, & Duarte, 2015) is a 12-items version of the larger 26-items self-compassion scale (Neff, 2003) designed to measure self-compassion (e.g. "I try to see my failings as part of the human condition", "I try to be understanding and patient towards those aspects of my personality I don't like"). Items are rated on a 5-point scale (1 = almost never; to 5 = almost always). The factor structure of SCS has been an ongoing topic of discussion, with several studies providing evidence for a one- or six-factor structure (overall self-compassion, or self-kindness, common humanity, mindfulness, self-judgment, isolation and over-identification) (Neff, 2003), and others suggesting the possibility of using SCS as a two-factor structure: one assessing a *self-compassionate* attitude (SCS-Pos: a composite of self-kindness, common humanity and mindfulness) and one measuring a *self-critical* attitude (SCS-Neg: that results from the sum of self-judgment, isolation and over-identification) (Muris & Petrocchi, 2017). The original study of the short form of SCS found an internal consistency of $\alpha = .86$ for one-factor structure (Raes et al., 2011). We followed Muris & Petrocchi (2017) and used the subscale SCS-Pos as a measure of self-compassion, which showed good internal consistency ($\alpha = .80$).

Data analysis

Statistical assumptions and Pearson´s correlation coefficients were analyzed using SPSS® (v. 23; IBM Corporation, Armonk NY, USA) for Mac®. We conducted both

bivariate and partial correlations, controlling for age and education level, and the significance of associations did not differ. Thus, we will only report bivariate correlations.

To test our moderated mediation model, we used the SPSS PROCESS macro, as it allows to simultaneously test mediation and moderation effects (Hayes, 2013). We tested Model 14, in which pain intensity (NPRS) is the predictor, depression symptoms (DASS) the dependent variable, cognitive fusion (CFQ) the mediator and self-compassion (SCS-Pos) the moderator of the relationship between cognitive fusion and depression symptoms. A mediation – also known as indirect effect – occurs when the effect of an independent variable on a dependent variable occurs through its effect on a mediator (Hayes, 2013). A moderation occurs when an independent variable and a moderator interact, and this interaction influences a dependent variable (Hayes, 2013).

In order to test the significance of the moderation slopes, an online calculator (https://psychology.victoria.ac.nz/modgraph/onlinecontcomp.php) was used to perform simple slope computation of the moderation model. The simple moderation model estimates the effect of the interaction between cognitive fusion and self-compassion on depressive symptoms on each level of self-compassion (mean, +/- 1 SD). A moderation is considered when this interaction significantly predicts the dependent variable (in this case, depressive symptoms). The mediation was calculated using a 5000 Bootstrap sampling (Hayes, 2013), with 95% confidence level and Bias Corrected method. Indirect effect is considered significant if the upper and lower bound of the bias corrected confidence interval (BCCI) do not contain zero (Hayes, 2013).

Results

Preliminary Data Analyses

All variables presented acceptable values of skewness and kurtosis (SK< |3| and Ku< |8-10|) (Tabachnick & Fidell, 2014), suggesting no severe violation of normality. In

addition, there were no outliers. Finally, there were no missing data as the online protocol did not allow submitting incomplete questionnaires.

Descriptive analyses

Mean and standard deviation results are depicted in Table 1.

------------------------------------*Insert table 1 around here* ------------------------------------

Mean results showed participants presented normal levels of depressive symptoms, and moderate pain intensity. Additionally, although to our knowledge there is not normative data for interpreting levels of cognitive fusion and self-compassion in CP, results were similar to those reported in samples with physical or clinical conditions.

Correlation analyses

Results from correlation analyses are depicted in Table 1. Given that participants had a wide range of ages (Min = 21; Max = 73) and levels of education (Min = primary; Max = doctorate), we conducted correlation analyses between age and levels of education and all variables studied. Results only showed significance of correlation between level of education and NPRS ($r = -.242$, $p < .001$), and between level of education and CFQ ($r = -.178$, $p = .007$). Results from partial correlation (controlling for level of education) did not differ in significance nor magnitude from bivariate correlations, thus we will only report the latter. Results showed that pain intensity was significantly and positively associated with cognitive fusion and depressive symptoms. Additionally, self-compassion was significantly and negatively correlated with cognitive fusion and depressive symptoms, and cognitive fusion was significantly and positively associated with depressive symptoms. Pain intensity did not correlate significantly with self-compassion.

Moderated mediation analyses

A moderated mediation model was used to test if cognitive fusion mediates the association between pain intensity and depressive symptoms, while simultaneously testing if this mediation was moderated by self-compassion (see Figure 1).

-----------------------------------*Insert figure 1 around here* -----------------------------------

Results showed the model explained 63% of the variance in depressive symptoms. The association between pain intensity and depressive symptoms was mediated by cognitive fusion, and this relationship was moderated by self-compassion, as hypothesized. In order to further examine the significance of simple slopes of the interaction, a simple moderation model was firstly conducted, and results showed the interaction was significant (b = -.01, SE = .005, t = -2.282, p = .023, 95%IC = -.021/-.002). These results suggest that the association between cognitive fusion and depressive symptoms is contingent of self-compassion. A visual representation of the moderation was then conducted using mean centered values of CFQ (M = 0; SD = +/-11.21) and SCS-Pos (M = 0; SD = +/- 4.50) (see Figure 2)

----------------------- insert Figure 2 --

In order to examine if the interaction was significant at all levels of self-compassion, simple slopes computations were conducted. Results show that the interaction was significant for high (t = 7.510, p <.001), medium (t = 10.587, p <.001) and low (t = 10.314, p <.001) levels of self-compassion.

Additionally, in order to examine the increase in variance in depression symptoms explained by the model, we progressively estimated our model: a simple regression (NPRS predicting DASS-Dep) explained 6% of depressive symptoms (R^2= .057; b = .788, p = .000), followed by a simple mediation model (CFQ mediating the association between NPRS and DASS-Dep) that explained 58.3% of depressive

symptoms (R^2= .583; b = .504, p = .002). Thus, when cognitive fusion is added to the model, there is a 52.3% increase in the explanation of depressive symptoms.

Discussion

The comorbidity of CP and depression is widely recognized (e.g. Jobski et al., 2017; McDonald et al, 2016). Nevertheless, there is still a lack of evidence on why some individuals with CP develop depressive symptoms while others do not. The current study set out to add empirical data to this ongoing discussion, testing a moderated mediation model in which cognitive fusion operates as a mediator between pain intensity and depressive symptoms, while self-compassion moderates the relationship between cognitive fusion and depressive symptoms.

Results from correlation analyses corroborated the existing literature. Specifically, results showed that pain intensity was significantly and positively correlated with cognitive fusion and depression symptoms, which supports previous research on the relationship between cognitive fusion and mental health in CP (McCracken et al., 2014; Scott et al., 2016). Although these result show that pain intensity and depressive symptoms are significantly correlated, the association is small. It is also of note that on average, participants had moderate levels of pain intensity, and sub-clinical levels of depressive symptoms. It is possible that higher levels of depressive symptoms would yield a greater association between pain and depressive symptoms. In contrast, the result could be interpreted as support for the hypothesis that depression in CP populations is more strongly influenced by other psychological factors than by pain itself (e.g. Gatchel et al., 2007).

Additionally, results showed that cognitive fusion is significantly and positively correlated with depressive symptoms, while negatively associated with self-compassion. Although there are theoretical (Neff & Tirch, 2013) and empirical grounds (Gillanders et

al., 2015) for expecting the negative association between cognitive fusion and self-compassion, this has not been extensively studied CP. The correlation between pain intensity and self-compassion, although was in the theoretically expected direction, was not significant.

Self-compassion is a relatively new construct in CP literature, and only a few studies have explored its role in CP responding. Research has explored its role on the development of affective and cognitive symptoms in CP (Costa & Pinto-Gouveia, 2011a; Wren et al., 2012), rather than its impact on and/or association with pain intensity. Nevertheless, this non-significant finding is interesting in itself, as it suggests a complex pattern of relationship between variables.

Indeed, we further estimated a conceptualized model of moderated mediation, in which cognitive fusion mediated the relationship between pain intensity and depressive symptoms, while self-compassion moderated this relationship. Results supported the hypothesized model, and explained 63% of depressive symptoms. Cognitive fusion played an important role in the association between pain intensity and depressive symptoms: by testing the mediation model progressively, results showed that adding cognitive fusion to the model increases 52.3% on the explanation of depressive symptoms. This further supports the consensus that CP is a multifactorial condition, in which psychological processes play a considerable role (e.g. Gatchel et al., 2007). Indeed, our data suggest that depressive symptoms in chronic pain are greatly influenced by the degree to which a person becomes entangled with their thoughts, emotions and/or physical sensations, rather than experiencing them as transient experiences.

Additionally, the estimated model shows that self-compassion significantly moderates the association between cognitive fusion and depressive symptoms, and this moderation occurs at all levels of self-compassion. Indeed, results show that when

considering individuals in the same range of cognitive fusion, those who present higher levels of self-compassion also present lower levels of depressive symptoms. Although drawing causality from this study is unwarranted, a tentative interpretation is that being able to react kindly and with warmth to perceived personal flaws and shortcomings seems to buffer the pervasive impact of being entangled with internal experiences (e.g. thoughts, emotions, physical sensations) on depressive symptoms, which echo similar results in cancer patients (Gillanders et al., 2015).

These findings have several clinical implications. The data suggest that attempts to reduce pain intensity as a way of improving mood would be a relatively weak treatment target. In contrast, reducing cognitive fusion and improving self-compassion would be likely to lead to improvements in mood. Acceptance- and mindfulness-based interventions have good evidence for their utility in chronic pain populations, influencing a range of outcomes including depressed mood (Hann & McCracken, 2014; Veehof et al., 2016). Interventions in CP may benefit from introducing deliteralization techniques as a way of interrupting the fusion with language-focused processes (Blackledge, 2007), as well as mindfulness meditation practices in order to promote distancing from and acceptance of internal experiences (McCracken & Vowels, 2014). Whilst self-compassion is often an important aspect of acceptance and mindfulness based interventions, little empirical work exists exploring more explicit compassion-based interventions in CP (Purdie & Morley, 2016). The current study suggests that interventions targeting self-compassion could be helpfully applied in CP settings. In order to promote self-compassion, therapists might consider introducing loving-kindness meditation, "Tonglen" meditation practice (Chapin, Darnall, Seppala, Doty, Hah, & Mackey, 2014) and self-compassionate imagery through compassionate mind training exercises (Parry & Malpus, 2017). Future research should consider expanding these

results by exploring other potentially relevant variables. For example, future studies in CP should explore the impact of cognitive fusion in quality of life and adaptation to CP, as well as its relationship with experiencing obstacles to valued-guided actions. Also, studies might move the conversation further by conducting experimental designs aiming at studying the relationship between cognitive fusion, self-compassion and behavioral outputs, such as avoidant behavior and fear of movement (kinesiophobia). Future studies should also consider testing the acceptability and impact of compassion-based interventions for CP, particularly with designs that allow the measuring of the specific impact of adding self-compassion exercises in acceptance- and mindfulness-based intervention for CP.

Several limitations should be considered. Firstly, this is a cross-sectional study, which prevents us from drawing conclusions regarding causality. Further studies should seek to replicate the conceptualized model in a longitudinal design, which would allow a causal test of these mediation and moderation relationships. Additionally, although our goal was to measure depressive symptoms rather than depression as a clinical diagnosis, mean levels of depressive symptoms in our sample were sub-clinical, meaning that generalizing our results to clinically depressed patients should be done cautiously, until replication of this study with participants who report more depressive symptoms. A further limitation is that our sample was all female, which makes generalization to other genders unwarranted.

This study found that the association between pain intensity and depressive symptoms is mediated by cognitive fusion, which suggests that the route from pain to depression is significantly related to being entangled with internal experiences (e.g. thoughts, emotions, physical sensations) instead of experiencing them as transient mental events. Also, the current study provided evidence that the association between cognitive

fusion and depressive symptoms is moderated by one´s ability to respond kindly and with warmth to perceived personal difficulties and shortcomings. This seems to provide preliminary support for the promotion of self-compassion skills in psychological interventions for CP.

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Table 1

Mean (M) and Standard Deviation (SD) of all variables, and Pearson
moment correlation between all variables in the total sample (N = 231)

Measures	*M*	*SD*	NPRS	CFQ	SCS-Pos
			Correlations		
1. NPRS	5.69	1.77	-	-	-
2. CFQ	27.55	11.21	.21**	-	-
3. SCS-Pos	18.83	5.84	-.09	-.51***	-
4. DASS-Dep	8.05	5.84	.24***	.76***	-.55***

Note. *** p <.001; ** p <.005;

NPRS = Numeric Pain Rating Scale; CFQ = Cognitive Fusion Questionnaire; SCS-Pos = Self-compassion Scale – Positive subscale; DASS-Dep (depression, anxiety and stress scale – depression subscale)
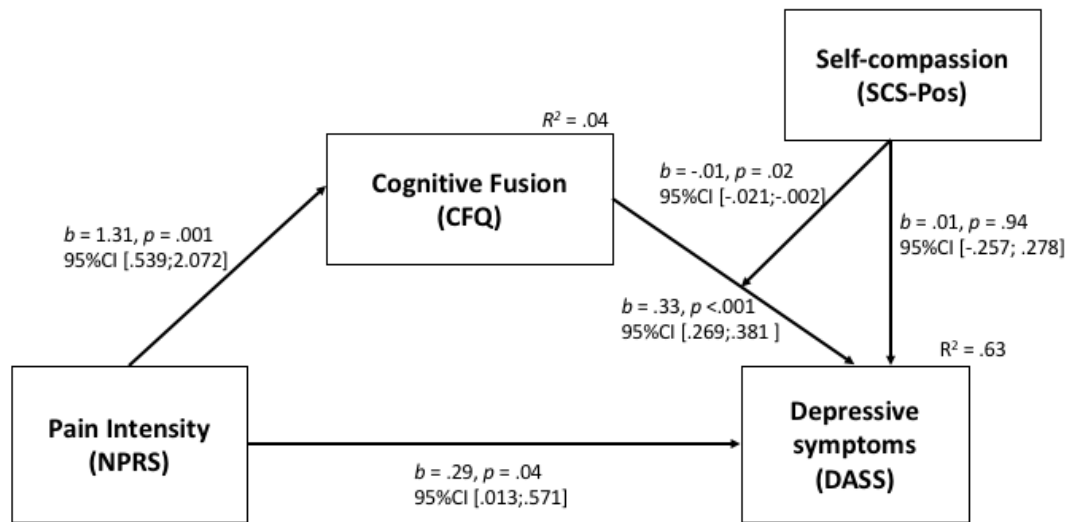
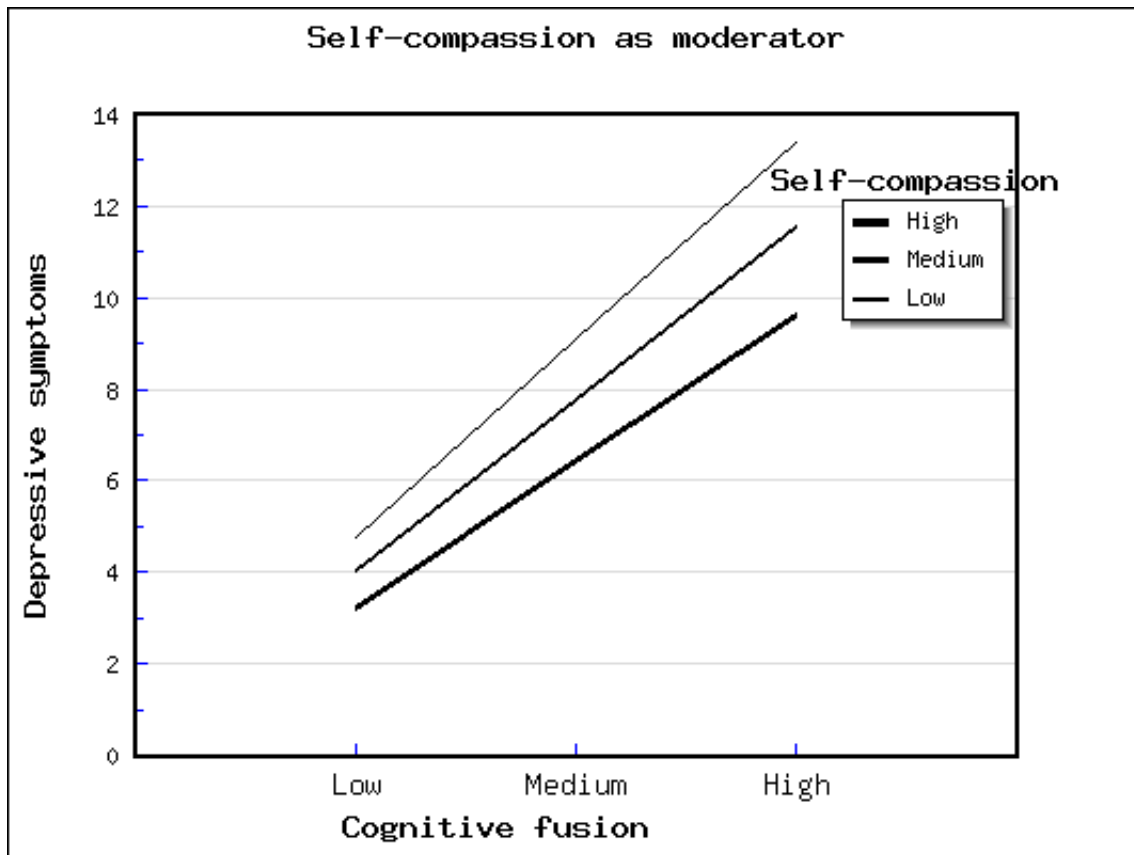Figure 1. Moderated Mediation Model.

Figure 2. The moderating role of self-compassion on the relationship between cognitive fusion and depressive symptoms.